

SPECIFICATION AMENDMENTS

None

CLAIM AMENDMENTS

Claim Amendment Summary

Claims pending

- Before this Amendment: Claims 6-13, 19-28, 30-32, 34 and 35.
- After this Amendment: Claims 6-13, 19-28, 30-32, 34 and 35

Non-Elected, Canceled, or Withdrawn claims: 1-5, 14-18, 29, and

33

Amended claims: Claim 6.

New claims: None.

Claims:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Currently Amended): A method comprising:

packetizing content information including video objects, to generate a media stream of a session wherein the media stream comprises a plurality of packets associated with a first video object and a plurality of packets associated with a second video object, and wherein:

the first video object has a first quality of service (QoS) value;

the second video object has a second QoS value; and

the first QoS value is different than the second QoS value;

wherein packetizing the content information comprises:

using a marker mapping mechanism comprising an internet protocol (IP) stack to differentiate the packets associated with the first video object from the packets associated with the second video object within the media stream, wherein the IP stack comprises:

a data path comprising:

a transmission control protocol (TCP) layer;

an IP layer; and

a queuing layer, wherein the queuing layer comprises a plurality of priority class queues;

a control path comprising:

an application-aware QoS control layer;

a packet classifier layer; and

a QoS packet scheduler layer; and

a scheduling layer;

wherein the data path and the control path feed into the scheduling layer;

generating resource coordination information based at least in part on:

at least one prioritizing parameter associated with an application communicating the content information; and

one or more prioritizing parameters associated with a particular video object that is selected by a user interaction via a remote device that is operatively coupled to a network;

such that the one or more prioritizing parameters reflect that the particular video object has a relatively higher priority than other ones of the video objects and is to be allocated a relatively higher portion of available bandwidth so that the particular video object can be provided to the remote device with relatively better perceptual visual quality;

based on the resource coordination information, selectively associating each packet of the media stream content information with a service class selected from among at least two different service classes based on the resource coordination information;

selectively outputting at least one packet of ~~content information~~ the media stream based on a priority associated with the service class associated with the at least one packet of content information such that the available bandwidth is allocated in accordance with the priority associated with the service class; and

providing the at least one packet of ~~content information~~ the media stream to the network.

7. (Previously Presented): The method as recited in Claim 6, wherein the user interaction comprises selection of the particular video object by at least one of mouse clicking, mouse moving, object zoom-in, or object zoom-out.

8. (Original): The method as recited in Claim 6, wherein generating the resource coordination information further includes generating the resource coordination information based at least in part on at least one prioritizing parameter associated with a monitored performance of the network.

9. (Previously Presented): The method as recited in Claim 6, further comprising encoding initial content information as the content information.

10. (Original): The method as recited in Claim 9, further comprising segmenting raw video data into a plurality of video objects and wherein at least one of the video objects is included in the initial content information.

11. (Previously Presented): The method as recited in Claim 9, wherein the initial content information includes data representing media

information selected from a group comprising video information, audio information, image information, and textual information.

12. (Previously Presented): One or more computer-readable storage media comprising computer instructions for performing acts comprising:

generating prioritization information based at least in part on at least one parameter associated with an application streaming media information and on one or more prioritizing parameters associated with a particular video object that is selected from the media information by a user interaction via a remote device that is operatively coupled to a network such that the one or more prioritizing parameters reflect that the particular video object has a relatively higher priority than other video objects and is to be allocated a relatively higher portion of available bandwidth so that the particular video object can be provided to the remote device with relatively better perceptual visual quality;

associating packets of the media information with a service class selected from a plurality of different service classes based on the prioritization information;

selectively discarding a portion of the packets of the media information in accordance with an adaptive rate control mechanism at a sending computing device; and

selectively outputting from the sending computing device onto the network some of the packets of media information based on their respective service classes such that the available bandwidth is allocated in accordance with respective priorities associated with the respective service classes.

13. (Previously Presented): The one or more computer-readable storage media as recited in Claim 12, wherein the media information includes data representing media information selected from a group comprising video information, video objects, audio information, image information, and textual information.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Previously Presented): A computing apparatus having storage media, the computing apparatus comprising:

packetizer logic configured to receive encoded content information and output corresponding packets of content information, the content information including video objects;

collaborator logic operatively coupled to the packetizer logic and configured to receive at least one prioritizing parameter associated with at least one application, including an application communicating the content information, and one or more prioritizing parameters associated with a particular video object that is selected by a user interaction via a remote device that is operatively coupled to a network such that the one or more prioritizing parameters reflect that the particular video object has a relatively higher priority than other ones of the video objects and is to be allocated a relatively higher portion of available bandwidth so that the particular video object can be provided to the remote device with relatively better perceptual visual quality; the collaborator logic further configured to output resource coordination information based at least in part on the at least one prioritizing parameter associated with the application and the one or more prioritizing parameters associated with the particular video object;

priority mapping logic operatively coupled to the collaborator logic to receive the resource coordination information and operatively coupled to the

packetizer logic to receive the packetized content information, the priority mapping logic configured to selectively associate each received packet of content information with a service class selected from among at least two different service classes based on the resource coordination information, and to selectively output at least one packet of content information based on a priority associated with each service class; and

forwarder logic operatively coupled to the priority mapping logic and configurable to provide the at least one packet of content information to the network such that the available bandwidth is allocated in accordance with a priority associated with each service class.

20. (Previously Presented): The computing apparatus as recited in Claim 19, wherein the user interaction comprises selection of the particular video object by at least one of mouse clicking, mouse moving, object zoom-in, or object zoom-out.

21. (Previously Presented): The computing apparatus as recited in Claim 19, further comprising:

network monitoring logic operatively coupled to the collaborator logic and configurable for use with the network and in monitoring network

performance, and to output at least one prioritizing parameter associated with the network performance, and

wherein the collaborator logic is further configured to receive the at least one prioritizing parameter associated with the network performance, and output the resource coordination information based at least in part on the at least one prioritizing parameter associated with the network performance.

22. (Previously Presented): The computing apparatus as recited in Claim 19, further comprising:

encoding logic operatively coupled to the packetizer logic and configured to encode initial content information, and output corresponding encoded content information.

23. (Previously Presented): The computing apparatus as recited in Claim 22, further comprising:

segmentation logic operatively coupled to the encoding logic and configured to segment raw video data into a plurality of video objects, and output initial content information that includes at least one video object of the video objects.

24. (Previously Presented): The computing apparatus as recited in Claim 22, wherein the initial content information includes data representing media information selected from a group comprising video information, audio information, image information, and textual information.

25. (Previously Presented): A system comprising:
a network environment including a backbone network, and a first access network and a second access network each being operatively coupled to the backbone network;

a plurality of host devices including a first host device operatively coupled to the first access network and a second host device operatively coupled to the second access network, the second host device receiving a user interaction comprising selection of a particular video object; and

a plurality of application-aware resource controllers including a first application-aware resource controller operatively configured within the first access network and a second application-aware resource controller operatively configured within the second access network, wherein the first application-aware resource controller is configured to aggregate content information associated with at least one communication session established between the first host device and the second host device via the network environment and to map the aggregated information to at least two service classes selected from a group of

two or more different service classes based at least in part on one or more prioritizing parameters associated with the selection of the particular video object, and wherein the one or more prioritizing parameters reflect that the particular video object has a relatively higher priority than other video objects and is to be allocated a relatively higher portion of available bandwidth within the network environment so that the particular video object can be provided to the second host device with relatively better perceptual visual quality;

wherein at least the first application-aware resource controller is configured to operatively associate a respective priority with each respective service class of the two or more different service classes so that the available bandwidth can be allocated by the first application-aware resource controller in accordance with the respective priority associated with each respective service class.

26. (Previously Presented): The system as recited in Claim 25, wherein at least the first application-aware resource controller is configured to selectively adapt a flow rate associated with the content information based on an identified state of at least one of the first access network, the second access network, or the backbone network .

27. (Previously Presented): The system as recited in Claim 25, wherein at least the first application-aware resource controller is configured to selectively adapt a flow rate associated with the content information based on at least one identified requirement of the second host device.

28. (Original): The system as recited in Claim 25, wherein at least the first application-aware resource controller is configured to control the content information responsive to application-based signaling.

29. (Canceled)

30. (Previously Presented): The system as recited in Claim 25, further comprising at least one processing agent operatively configured within the backbone network and configured to selectively filter the aggregated information associated with different communication sessions based on identified bandwidth constraints and service classes.

31. (Previously Presented): The system as recited in Claim 25, wherein the content information includes data representing media information selected from a group comprising video information, audio information, image

information, and textual information.

32. (Previously Presented): The system as recited in Claim 30, wherein the processing agent is further configured to perform packet-level fast transcoding and related signaling.

33. (Canceled)

34. (Previously Presented): The computer-readable media as recited in Claim 12, wherein the user interaction comprises selection of the particular video object by at least one of mouse clicking, mouse moving, object zoom-in, or object zoom-out.

35. (Previously Presented): The system as recited in Claim 25, wherein the user interaction comprises the selection of the particular video object by at least one of mouse clicking, mouse moving, object zoom-in, or object zoom-out.